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ORIGINAL

INEEL PUBLIC MEETING

ON PROPOSED CLEANUP PLAN FOR

WASTE AREA GROUP 5

(POWER BURST FACILITY/AUXILIARY REACTOR AREA)

TUESDAY, MAY 18, 1999

AT 7:00 P.M.

SHILO INN
780 LINDSAY BOULEVARD
IDAHO FALLS, IDAHO

Reported By:
Kimberly Carpenter, CSR #600

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PROCEEDINGS

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MR. SIMPSON: Welcome to tonight's meeting. And, also, thanks for forgoing the sequel to the NBC movie "Atomic Train" to be here tonight.

I'm Erik Simpson. I'm the Community Relations Plan Coordinator for the Environmental Restoration Program, and I'm going to facilitate tonight's meeting.

We're here tonight to discuss the remedial investigation and feasibility study for Waste Area Group 5. And Waste Area Group 5 is the Environmental Restoration Program designation for the Power Burst Facility and Auxiliary Reactor Area. This is the sixth comprehensive environmental investigation that the INEEL has completed, and we have three more to go.

For those who are familiar with our documents and regularly read them, the Waste Area Group 5 proposed plan follows the same format as the Waste Area Group 1 proposed plan which was released last fall.

The document, the Waste Area Group 1 Proposed Plan, was developed with the use and

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help of a citizens focus group. And the PBF and ARA proposed plan was developed with the help of the Citizens Advisory Board ER Subcommittee, which reviewed and commented on this document. So, really, there's been a lot that's gone into this document, involving a lot of people's time and efforts.

At this time, I would like to review the agenda with everyone. With a small group, I think we're probably not going to be quite as formal as we are in -- or were in our past meetings.

But, at first, we'll have the presentation. And then we'll have -- following the presentation, we'll have a questions-and-answers session, where you can ask questions of the project managers.

I should mention that, if you have some questions during the course of the presentation, feel free to ask them. And then we will have the Q-and-A session following the presentation.

Following the questions-and-answers session, we'll have a public comment period, where your comments are entered into the record. And we have a court reporter here tonight who is

recording all portions of this meeting.

Also, in the back of the proposed plan -- whoops -- in the back of the proposed plan, we have a comment form, a postage-paid comment form, that you can write your comments down on and send them directly to DOE.

Also, we have a comment form at the back of the room, which is also postage-paid. And, for the first time, you can submit your comments electronically over the Internet.

And, oh, I should also mention, on the back of the agenda, there's a comment form, an evaluation form, regarding this meeting. So, please take the time to make a few comments, and we'll use your suggests to shape our future public meetings.

At this time, I'd like to introduce the presenters. Over here, with the State of Idaho, Division of Environmental Quality, is Scott Reno. Scott will give an overview of the Power Burst Facility and Auxiliary Reactor Area, and he'll discuss the contaminate sources.

Keith Rose. Keith is the project manager with the Environmental Protection Agency, Region 10, in Seattle. And Keith will talk about

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the risk assessment process and also the remedial action objectives.

And then we have Kevin O'Neill. Kevin is the project manager for the Department of Energy. And Kevin will talk about the proposed alternatives. And then, also, we'll just provide a summary at the end.

So, with that, I'm going to pass the mike over to Scott.

MR. RENO: Thank you, Erik. Can you hear me okay? Did you turn it off? Okay. How about now?

I'd like to thank you for coming tonight, taking the time out of your busy schedules and coming to tell us about what you think of our plan. That's why we're here. This is just to help bring people up to speed a little bit. So, I'll give you a little introduction to the facility.

Waste Area Group 5 is located in the south central portion of the INEEL. It consists of two main operational areas. To the north part of the PBF/ARA area were five reactors that operated there beginning in the '50s and operating into the '80s.

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They go around spokes of a wagon wheel, around a central control area. There was a power burst reactor that is still there. It's in standby mode today. And it's on the former location of the SPERT-I reactor.

And then going around the wagon wheel, there was a SPERT-II reactor, the SPERT-III reactor and the SPERT-IV reactor. At the locations of the former SPERT-III reactor is now the Waste Experimental Reduction Facility. And at the location of the former SPERT-IV reactor is the Mixed Waste Storage Facility.

If we move on over to the Auxiliary Reactor Area, there were four main operational areas there. ARA-I housed support facilities for the SL-1 reactor. At ARA-II, it also housed facilities that supported operations at SL-1.

And, at ARA-III, Area 3, it housed the Army's Gas-Cooled Reactor Experiment. And, also, for a period of time, the Mobile Low-Power Reactor was in operation there. And this was a reactor that was on tracks, like a tank, and they were looking at possibly some remote applications of having a power source.

The last facility there is ARA-IV. The

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nuclear effects reactor operated there in the late '50s and early '60s. And that area is now utilized for explosives testing.

All the reactors and facilities at the ARA area have been dismantled and tore down, and there's no active reactors there today.

Several activities have occurred here at Waste Area Group 5 already. We did do a cleanup at the Power Burst Facility's evaporation pond, and we removed hot spots that contained cesium-137 and chromium. And we also cleaned up the contents of the sump that fed that pond.

We put a permanent cover on the former trenches and the pit where the debris is from the SL-1 incident. We removed waste. We did a removal action at the ARA-II seepage pit and containerized some -- some liquids and sludges that were present there. And the disposition of that drum material is part of this action.

And then we have seven remaining sites that we are proposing to take an action at under this proposed plan. We investigated a total of 55 sites at Waste Area Group 5, 48 of which were determined to require either no action or no further action. We have seven remaining sites.

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The first of these is the ARA-I chemical evaporation pond. It received wastewaters from the hot cells and a small laboratory that were present at the ARA-I facility. We expect in the neighborhood of 2,400 cubic yards of contaminated soils. We'll need action at that site.

The ARA-12 radioactive leach pond contains on the order of 90 cubic yards of contaminated material, primarily contaminated with silver-108 metastable, the radionuclide, and also cesium-137.

MS. BEATRICE BRAILSFORD: What was the soil total?

MR. RENO: I'm sorry, Beatrice?

MS. BEATRICE BRAILSFORD: I'm sorry. Did you say the soil total? I'm sorry. Did you say how much was there?

UNIDENTIFIED AUDIENCE MEMBER: Ninety.

MS. BEATRICE BRAILSFORD: Nineteen?

MR. RENO: Yeah. Ninety. On the order of 90.

And this contamination is a result of the discharges of secondary cooling water from the Gas-Cooled Reactor Experiment and possibly from the Mobile Low-Power Reactor, too. This is

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a shallow unlined pond. It's a natural depression that's present there.

Site ARA-25 consists of -- on the order of 70 cubic yards of contaminated soils that were encountered during the decommissioning and dismantlement of the ARA-I facility. They ran into some hot soils in the vicinity on some floor drains on the floor slabs, and it's contaminated with radionuclides.

The ARA-23 is the most significant source of contamination in this area. It's a 58-acre area. It's primarily contaminated with windblown deposition from the cleanup of the SL-1 incident.

If you're not familiar with the SL-1 incident, it was a power excursion that had happened in the Stationary Low-Power Reactor in January of 1961. It heated the cooling water around the reactor vessel and resulted in a steam explosion. And it did result in the deaths of the three operators that were at the facility that day.

As I've said before, we've already taken an action to deal with where they buried the debris from the facility, but we still have this

depositional area which is primarily contaminated with cesium-137, and primarily in the upper four inches of the soils.

We're proposing to try to remediate approximately 46,500 cubic yards of soils at SL-1. And that comprises the majority of the 50,000 yards, or so, of soils we're going to try to clean up with this action.

The SPERT-II leach pond, PBF-16, received backwash from the water softeners and treatment systems at the SPERT-II reactor. There is a little bit of mercury that we found near the outfall to this shallow unlined pond. And we're anticipating on the order of 500 cubic yards of soil that would be remediated at PBF-16.

Now, for our two -- two tank sites. The first one is the ARA-02 sanitary septic system. It should not have had waste in it. We're not entirely sure how it got there, but it is there. As I said before, we've already removed the sludge from the septic tanks itself, the sludge and liquid, and it's containerized in 55 drums.

There were three septic tanks in series, and then they discharged to a seepage pit, which was 12 feet deep. At the bottom of the seepage

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pit is approximately two yards of a dry sludge we're proposing to remediate, and then to dispose of the piping and the pit and the tanks themselves.

The last site is the ARA-16 mixed low-level waste tank. This is a 1,000-gallon stainless steel tank. It received discharges from the ARA-I hot shops and the metal-etching process that was there.

It contains on the order of 30 gallons of mixed low-level sludge that we'll need to dispose of. In addition, we'll be proposing to dispose of the tank vault and the contaminated soils within the tank vault.

Now, we have lowered a camera down inside the tank. It's in very good shape. You can still see the grease pencil writings on the side of the tank. We don't think the tank has leaked, and there's no evidence of that.

There is contamination in the soils in the tank vault. But that contamination is consistent with the contaminations prevalent in this area from the SL-1 incident.

The constituents that are in this tank, which include solvents, radionuclides and PCB,

only the cesium is what we're finding at any level of concern in those soils.

So, if, for some reason, we do find that there has been a leak there, then we would incorporate that into the action that we're talking about.

Okay. With that, I'm going to turn this over to Keith Rose of the EPA to discuss our risk assessment process.

MR. ROSE: As Scott said, I'm here to talk about the risk assessment that was conducted for the WAG 5 facility. He also mentioned the remedial action objectives and the evaluation criteria for the alternatives we did evaluate.

The risk assessment is composed of three major components. The first is to identify contaminants which could cause an adverse effect to human health or the environment. These are commonly called contaminants of concern.

The second part is to identify pathways, exposure pathways, which -- by which humans -- human and ecological receptors could be exposed to contaminants of concern.

The third element is to identify the receptors, human and ecological receptors, which

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could be exposed to contaminants at levels of concern.

MS. BEATRICE BRAILSFORD: So, when something is named a contaminant of concern, does that mean it's present or it's present at a certain concentration?

MR. ROSE: It's present at a concentration which could potentially pose an adverse risk.

Okay. The human health assessment included two risk scenarios. The first one is called an occupational scenario. It deals with workers at the facility.

This scenario is based on an exposure duration of eight hours a day, 250 days a year for 25 years. It includes current workers and workers that would be exposed 100 years from now -- beginning 100 years from now.

The primary pathways of concern for this scenario are the external exposure and dermal absorption pathways. Institutional controls, including fences and barriers and monitoring of workers, are currently assumed to protect current workers at the facility.

The second scenario we looked at is the

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residential, the future residential scenario, which would begin 100 years in the future.

It's assumed that the government will be in control of all facilities at INEEL for 100 years. And beyond that 100-year period, there could potentially be residents living out there.

This exposure pathway is based on24 hours a day, 350 days a year for 30 years, would begin 100 years in the future. And the primary pathways of concern are external exposure and dermal absorption.

Now, the current -- the risk for cancer-causing substances, or carcinogens, is -- the acceptable range for carcinogens is typically in the range of one in ten thousand to one in one million. So, our cleanup decisions are usually based in that range, as shown in this figure over here, between one in ten thousand and one in a million.

For contaminants which could cause a noncarcinogenic risk, we have a different method for determining what's the acceptable risk level. That is called a hazard indices or hazard index.

And it's calculated by -- it's a ratio

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of the exposed dose -- the exposure -- or the dose of exposure to a reference value. And when that number is above 1.0, that's -- that could mean that it would be a potential site for cleanup. And that's our threshold for determining a potential cleanup action.

Again, the second major component of our risk assessment was the ecological risk assessment. This assessment examined possible impacts to plants, animals, birds, reptiles and insects. It evaluated individual species of concern and groups of species. Contaminant screening was based on site-specific data and data from the literature.

And it was assumed that the ecological receptors would be exposed to these contaminants for 100 percent of the time, which is very conservative.

We all know that the -- the environmental receptors, the critters out there, are moving around. They don't get exposed to contaminants in one place for all of their lifetime. But we took the conservative estimate that they would be exposed 100 percent of their lifetime.

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The two primary pathways by which the ecological receptors could be exposed to contaminants were through a direct dose from contaminated soil and by ingestion of contaminated plants and prey.

It was found that the highest ecological risks were for two categories of animals. One was insect-eating mammals, such as Merriam's shrew and the northern grasshopper mouse, and for insect-eating birds, such as the ruby-crowned kinglet and the western bluebird.

For ecological risks, we used a parameter called the "hazard quotient" to determine the extent, or the degree, of adverse effect to environmental receptors.

And this was a ratio of the potential dose to a reference value. This reference value was something like a no-adverse-effect level, or something like that, which is based on no adverse effects.

This table shows the contaminants of concern for human health and ecological receptors. Scott touched on this earlier. This breaks it down into the seven sites of concern, which he mentioned, the seven areas of concern.

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These are the contaminants of concern for human health. You see that they include cesium-137, silver-108 metastable, radium-226, arsenic, uranium-235 and uranium-238.

Among all those -- among all the radionuclides, the cesium-137 is the most common and drives the risk at most of these sites.

For the ecological receptors, we had five metals of concern, including selenium, thallium, mercury, copper and lead.

This table here is a -- shows the result of the risk assessment. It's identical to Table 1 in the proposed plan. Once again, it shows the seven areas of concern here on the left. And in these columns are the risks due to a current occupational scenario. This is the future occupational scenario; and these -- this is the future residential scenario; and, finally, the ecological risks.

MS. BEATRICE BRAILSFORD: Is the ecological risks current?

MR. ROSE: Current, yes. That's current ecological risks.

The scenario -- the human health risk scenario, which we used as a basis for

determining cleanup actions, was the future residential scenario.

And you can see here that in five of the seven sites we had risks exceeding the acceptable risk range of one in ten thousand. We had risk at or above one in ten thousand at five of those sites.

And at four of the seven sites -- these four here -- we had ecological risk which had a hazard quotient greater than ten.

The remedial action objectives are really the basis now for determining cleanup goals at each site. We had four sets of remedial action objectives.

The first was to inhibit direct exposure to contaminants that would cause -- or would result in an excess cancer risk of one in ten thousand to workers or future residents.

The second objective was to inhibit dermal absorption of any contaminant of concern that would result in a hazard index of two or greater for workers or future residents.

Third was to prevent the release of the waste in the ARA-16 radionuclide tank, which Scott mentioned, to prevent the release of that

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waste to the environment where humans or ecological receptors could be exposed.

And, finally, the last objective was to inhibit ecological receptor exposure to contaminated soils with concentrations either greater than ten times the background -- or, actually, greater than ten times the background and with a hazard quotient greater than ten.

This overhead shows the evaluation criteria that are used for super fund cleanups. It consists of nine criterias -- nine criteria broken under three sets.

The first set are called threshold criteria, because any alternative that we look at has to satisfy these two criteria. They include protection of human health and the environment and compliance with all applicable environmental laws and regulations.

The second set of criteria are called balancing criteria. They're used to rank those alternatives which pass the threshold criteria. They consist of long-term effectiveness of the remedy, a reduction of toxicity, mobility or volume through treatment.

Short-term effectiveness addresses how

effective will the remedy be during the time it's implemented, how protective will it be to human health and the environment, particularly the workers that are doing the work.

The fourth in that category is ease of implementation. And the final one is the cost. And the cost here includes not only the capital cost of doing the construction of the remedy but the long-term O&M cost, if there are any.

Finally, there's -- the last set are called modifying criteria. They consist of state and public acceptance of the preferred alternative and the investigation in the feasibility stage that was done to support the proposed plan.

At this point, I would like to introduce Kevin O'Neill, who's going to be talking about the remediation action alternatives that we've evaluated for WAG 5.

MR. O'NEILL: Thank you, Keith.

As Keith pointed out, all the alternatives that we evaluate must pass the threshold criteria before we look into them in-depth.

And of the contaminated sites, these are

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the original alternatives we evaluated. Not all of them passed the threshold criteria. One, for instance, the no-action alternative, doesn't do anything to improve the site and is not considered protective. However, we evaluate that as a base line to compare the others to.

The limited action alternative would include institutional controls and things that are in place now to protect the worker and the public from encountering these wastes or being exposed to them. That is also not deemed to be protective once those institutional controls are removed, so we don't evaluate that any further.

The next one, excavation, consolidation and containment with a native soil cover within Waste Area Group 5 -- that's another one that we didn't believe met the threshold criteria, because we could not assure that a native soil cap would not erode following the 100-year period of institutional control that we've adopted as our standard. And, because the contaminants are long-lived that would remain underneath that cover, it was not deemed protective.

The next one, excavation, consolidation and containment with an engineered barrier was

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further considered. That's a barrier much like the SL-1 cap that was discussed in an earlier action. That barrier would preclude intrusion by animals or humans.

The next four alternatives are all very similar in that the gist of them is to remove the contaminated soil and dispose of it at an appropriate disposal facility that's licensed or built to the requirements necessary to protect the public.

We, in our proposed plan, combined those into Alternatives 4 and 5, five being where we implement, also, a technology that we're investigating called soil sorting. The hope of -- the technology is called the Segmented Gate System.

And the hope of implementing that technology is that we can reduce the volume of contaminated -- radiologically contaminated soil that requires disposal and hopefully, hence, reduce the cost of the project overall.

And the variation then is whether or not we dispose of on site. And it is our preference that we would dispose on site should suitable capacity be available.

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While I'm on the subject, I want to talk about this a little bit. We were planning to do this treatability study this next month. We were going to process 1,000 cubic yards of, primarily, cesium-contaminated soil through a Segmented Gate System, which is basically a conveyor belt that exposes the soil to a series of detectors, they're relayed to a series of gates, and it identifies contaminant soil that's contaminated above a set point and diverts the dirty soil to one pile and the clean soil to another.

Our hope is that we will get in excess of 90 percent volume reduction. And, if we do that, it will be competitive with direct disposal.

MS. BEATRICE BRAILSFORD: Say that last thing again. It will be --

MR. O'NEILL: Right now -- and I'll put up the next slide, because that's pertinent to your question.

If you look at the costs here for -- the blinking light. Direct disposal, this line here, is varying degrees of separation achieved during the Segmented Gate Study.

We evaluated it as a range of soil

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reduction -- I'm sorry -- volume reduction percentages. Zero percent means we didn't run it through, that we just dug the stuff up and hauled it off to a suitable repository. And, as you can see right there, it shows to be the lowest cost of those alternatives.

When we developed this at 50 percent, we didn't have -- we don't have on-site experience with how this technology will work with our soil and with our contamination. So, we used a conservative number and a conservative rate cost of processing. And it shows it to be significantly more expensive than direct haul.

Using a less, I guess, disciplined cost estimate, we evaluated what the cost would be at 90 percent reduction. We do have hopes that the cost of processing would go down with the large volume we have. We also have hopes that our percent separation will be higher, and that, in the end, it could actually be less expensive than direct disposal. And the treatability study is the way to find out that information.

In our comparing the various alternatives, no alternative, consolidation, on-site, or removal and disposal, our preferred

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alternative is to sort and dispose of that soil on-site.

MS. BEATRICE BRAILSFORD: What is the most expensive fraction of volume reduction to 50 percent?

MR. O'NEILL: Well, zero means we didn't even process it.

MS. BEATRICE BRAILSFORD: Right.

MR. O'NEILL: Okay. So, there's no cost of processing. Fifty percent means we got some reduction, but we have the cost in processing all of that soil, but not enough reduction to reduce the transportation and disposal costs to make it less than direct disposal.

UNIDENTIFIED AUDIENCE MEMBER: And then more soil would be hauled in?

MR. O'NEILL: Well, that could be, as well. If we remove a large volume, we would have to refill. Although, we believe that the depth that we're going to remove probably won't affect the terrain there. We're looking at maybe six inches of soil for most of it.

MS. BEATRICE BRAILSFORD: And then the soil dump is a one-time cost?

MR. O'NEILL: Cost. Right. So,

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long-term -- and that's a good point that I skipped over. As you see down here, operation and maintenance, there are numbers here for the first two alternatives but none here.

And that's because the cost of that operation and maintenance, and the monitoring, is captured in the disposal fee. And the responsibility is carried forward by the -- by the stewards of that facility.

This flow chart -- decision chart, if you will -- is found in the proposed plan. It basically outlines -- lays out how we're going to make our decision.

At the front end, any soil that's contaminated above an acceptable level will have to be removed. And if sorting is cost-effective, we will sort.

Our preferred alternative is to dispose of it at a new engineered facility on site. It would have to be sited or built, but -- which is in the works. If that is available and affordable, we would go there. If sorting reduces that cost, we would do that.

If that site's not available but another on-site location is available, such as RWMC, and

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our soil sorting gets our volume down to a small amount that they can handle, we would likely go there.

And our last choice would be to take this soil off site. And that becomes an expensive proposition, hauling radiologically contaminated soil across the roads. There's just costs involved with the packaging and transportation that makes this -- and also the increased disposal costs that makes that our last choice.

MS. BEATRICE BRAILSFORD: Is the 50,000 cubic yards that Scott referred to -- that is without any soil reduction, without any volume reduction?

MR. O'NEILL: Exactly. Exactly. And some of that -- some of the soil, a lot of the smaller sites, are contaminated with things other than radionuclides, and other radionuclides than cesium-137, which seems to work well in this technology, particularly if it's particulate.

If it's been something that's been leached to the ground through a liquid process, it may not be as effective, though we're going to try to demonstrate a few different types of soils

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to find out where it is effective.

Those soils that cannot be run on it would just be disposed of directly. They are smaller volumes.

MS. BEATRICE BRAILSFORD: And they're the ones -- they would also be the ones that have hazardous chemicals?

MR. O'NEILL: As well.

MS. BEATRICE BRAILSFORD: Because if this would not --

MR. O'NEILL: Right, right. This does not -- this does not do anything for hazardous chemicals or heavy metals. Strictly radiological. But that's our largest volume. And if we reduce that by 90 percent, the whole show gets smaller and more manageable.

The next activity, the next action, I want to discuss is the sanitary waste system. Again, this was a series of septic tanks that fed a seepage pit.

The waste has been removed from the tanks. We now have some residual dry sludge in the bottom of the seepage pit. We propose to remove that, treat it at WERF -- it's incinerable material -- remove the seepage pit itself, which

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is concrete block, dispose of that off-site, because it's likely mixed contaminated waste; and DECON the piping in the tankage and dispose of them on-site.

The other alternatives considered were removing that waste and chemically stabilizing it. That would require some -- some effort, some work, do some treatability studies. And the thermal treatment is quick and available and less expensive.

And another one was in situ stabilization and encapsulation. That would mean putting some soil or grout in the seepage pit and in the piping and leaving the -- and the tanks and leaving the material in place.

And this is how they ranked up. Again, our preferred alternative, it's the lowest cost. It's highly implementable. And it's got good long-term effectiveness. And we do reduce volume through treatment.

The last one is our radionuclide tank site. Again, this is not a release to the environment at this time. There is contaminated soil around the tank and in the vault. The vault's opened. It's not a covered vault. It

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just has soil piled in it that covers the tank.

There is RAD contamination there. However, we have not seen the signature of the contaminants that are in the tank in the adjacent soil. So, we believe that the integrity of the tank is good. We just need to get it out of there because it's -- it would be a nonacceptable risk if it -- if it did leach.

So, we looked at in situ vitrification. That's bringing in a technology that would melt all the soil and the tank and everything. It would turn it to glass.

We looked at doing that right there at the site. We looked at doing that up at TAN, where they're planning to conduct a similar activity. We looked at taking the waste itself up to TAN and treating it in their tanks.

Our preferred alternative is that we would remove that waste -- remove the tank, remove the waste, send the waste to the Advanced Mixed Waste Treatment Facility, let them treat it thermally. We could DECON the tank and piping and dispose of that suitably.

That variation, the next variation, just has off-site disposal versus on-site.

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The stabilization technologies would require some extensive testing and would require a lot of money to develop. Hence, they weren't evaluated further in the proposed plan. Or in the FS, I should say.

In situ vitrification at WAG 5 proved to be somewhat costly, just mobilizing the equipment and the skill there to do that work. Also, keep in mind that it's really a relatively small site. And in situ vitrification might not appear appropriate for such a small site where we could actually just remove the contamination instead of leaving it in place.

You see that the cost of removing the tank and taking it to TAN is lower than our preferred alternative. However, there are -- there are other difficulties involved with taking it up there.

While we believe that in situ vitrification would either thoroughly destroy the contaminants or immobilize them, it hasn't been proven on tanks, it hasn't been proven with PCBs, and, hence, compliance with the Land Disposal Restrictions would have to be demonstrated.

And we certainly -- well, it would be a

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costly and difficult venture -- let's put it that way -- where as we have an available technology coming on-line. The Advanced Mixed Waste Treatment Facility will be available about the same time we're doing this cleanup, and it would provide us the protection and remove the contamination from the environment. Or potential contamination. Because, as I said, that tank has not leaked.

So, in summary, we've looked at -- at WAG 5, we've looked at 55 release sites. Many of them were shown not to be of significant concern. They didn't have a risk -- a nonacceptable risk.

Seven of the sites do, though. And tonight we've talked about what are some of the things we've determined would be a good way to treat them.

Our preferred -- if we take the cost of our preferred alternatives, the sum of them could cost a combined $26 million. I need to point out that's at the 50 percent volume reduction level. If we didn't even treat it through -- or process it, it would be cheaper than that. And if we get 90 percent, we could save an easy $5 million off

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of that on our -- on our total cost.
Opportunities for public involvement. Today, here, you're here to hear what we have to say, make a personal assessment, provide us your input and tell us what you think would be a good answer, what you think of what we've done, the assumptions we've made.
This fall we hope to sign a Record of Decision. Following that would be a remedial design, culminating in a remedial action, hopefully, in the year 2001 and completing the cleanup at WAG 5 by year 2003.
I'm going to turn this back over to Erik, I think. Thank you.
MR. SIMPSON: Are there any more questions? Yes.
MS. BEVERLY CARLYLE: This gentleman was speaking of the removal at TAN. Who is "TAN"? What --
MR. O'NEILL: Oh, I'm sorry.
MS. BEVERLY CARLYLE: That's perfectly all right.
MR. O'NEILL: That use of acronyms by a bureaucrat. TAN is the Test Area North, also known in the ER world at WAG 1. That's at the

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very northern end of the INEEL. And they have a series of tanks that they're planning to treat, or at least looking at treating, using in situ vitrification.
MS. BEVERLY CARLYLE: And you have 55 potential release sites identified?
MR. O'NEILL: Right. Those are identified through interviews with individuals who had worked at the site and known areas where we had released materials to the environment. We went out to find areas. Some areas would be a fuel tank or a septic tank or a leach field or a pond.
MS. BEVERLY CARLYLE: Thank you.
MR. SIMPSON: Any other questions? Beatrice, any more?
MS. BEATRICE BRAILSFORD: I have a lot.
MR. SIMPSON: Okay. Fire away.
MS. BEATRICE BRAILSFORD: Okay. I asked one person. But has Fish and Wildlife ever done a sort of wildlife assessment out there?
MR. SIMPSON: Do you want to tackle that one, Scott?
MR. RENO: I'm sorry, Beatrice, I don't think I know the answer to that. I don't know if

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anybody else does.
MR. FRANK WEBBER: I'm not sure that Fish and Wildlife has. But RESL has done a lot of work with the receptors out there and the wildlife. And, currently, in Waste Area Group 10, WAG 10 is studying ecological hazards, for the most part, which includes wildlife, fauna, flora, you know, vegetation, etc.
They're kind of the wrap-up WAG that will take care of a good portion of those -- you know, those leftover contaminants or effects on ecological receptors. Although, we have evaluated ecological receptors around WAG 5. Those sites that we feel pose a significant hazard will be cleaned up in this action. The remainder are being handed off to WAG 10 for further study.
MS. BEATRICE BRAILSFORD: This SPERT-II leach pond, why are you still discharging water to it? I mean, in the whole sort of water pushes contamination down.
MS. JEAN HOLDREN: There's nothing going out there of any significance at all. Mercury doesn't move. And mercury's our only contaminant concern. And it's a very restricted area.

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MR. SIMPSON: Okay. Jean, do you want to repeat that? I'm sorry.
MS. JEAN HOLDREN: Mercury is not very mobile. It doesn't move very far. And it's limited to a very small area. And we don't feel that the water that's out there is moving it.
MS. BEATRICE BRAILSFORD: Is the water on top of it?
MS. JEAN HOLDREN: No.
UNIDENTIFIED AUDIENCE MEMBER: Do animals have access to this mercury?
MR. SIMPSON: The question was: Do animals have access to the mercury?
MS. JEAN HOLDREN: And the answer is: That's why we are cleaning the site. It's an ecological risk.
UNIDENTIFIED AUDIENCE MEMBER: So, if we were to shoot an antelope that was somewhere out there, we have the possibility of taking in that mercury into our systems?
UNIDENTIFIED AUDIENCE MEMBER: Only if you ate it.
UNIDENTIFIED AUDIENCE MEMBER: Well, that's for shooting. If you were going hunting, that would be the object.

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MR. FRANK WEBBER: It should be pointed out that on the SPERT-II pond -- in fact, on page 13 of the proposed plan, it shows our preliminary remediation goals as 0.5 milligrams per kilogram, and the maximum detected concentration of mercury is 0.71 milligrams per kilogram. So, you know, it's really marginally contaminated. There's not much there.

UNIDENTIFIED AUDIENCE MEMBER: It depends on how much you eat; right?

MR. O'NEILL: Sure.

MS. BEVERLY CARLYLE: It depends on how your immune system has been so screwed up by everything, not just one little contaminated particle matter.

MS. JEAN HOLDREN: Again, remember that the ecological risk assessment that we did for that site assumes that an animal is there eating that for its entire life --

MS. BEVERLY CARLYLE: And assuming that you're lucky enough to shoot one in ten years.

MS. JEAN HOLDREN: That's correct.

MS. BEVERLY CARLYLE: -- or draw a tag.

UNIDENTIFIED AUDIENCE MEMBER: What does it do to the aquifer that's underneath it?

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MR. SIMPSON: The question was: What does it do to the aquifer underneath it?

MR. RENO: We've done sampling of a number of aquifer wells that are present beneath the PBF/ARA area. In addition, we've done computer modeling, fate and transport modeling, to determine what impacts there may be from the surface releases that are present there.

With both our analytical data from the wells that are there and the modeling that was done, we haven't determined that there is an unacceptable aquifer risk at this particular facility. And we're not projecting that there will be one in the future. Although, we will continue to monitor to ensure that our predictions are accurate.

MR. SIMPSON: Another question?

Go ahead, Beatrice.

MS. BEATRICE BRAILSFORD: When you're discussing the native soil cover, you have this sentence: "A soil barrier would not provide adequate protection for ecological intrusion and long-term protection for long-lived radionuclides because it could erode."

Are you describing the sorts of caps and

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covers that we have been using on the site?

MR. O'NEILL: No. This would be more like just straight soil with -- with a native vegetation, as opposed to a biotic barrier. For instance, the SL-1 cap has varied layers of graded granular material, the salt and rock and cobbles, and, on the top, riprap that is primarily there to keep humans out.

That's an engineered barrier. That's a designed barrier, as opposed to just being covered with natural soil.

MS. BEATRICE BRAILSFORD: Okay. But a lot of the Records of Decision up to now have been, it has been my impression, more towards the soil-barrier end of the range, rather than what you describe as the SL-1 cap.

MR. FRANK WEBBER: No. The SL-1 cap is considered an engineered barrier. It has multiple layers, just like some of the other barriers that are being built all over the country.

When we say "native soil," it would be like putting ten foot of just conventional soil over the top of it, where you would still have exposure to wind, you'd still have possibility of

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ants, burrowing animals, bringing up contamination through that barrier.

MS. BEATRICE BRAILSFORD: Okay. My question, though, is: At other WAGs where you have decided to use a cap and cover native vegetation, my impression has been that it is closer to the pile of dirt you described than to the engineered barrier present at SL-1.

MR. FRANK WEBBER: Well, there are several types of engineered barrier, one of which would be where you may have multiple layers, and you would put rock on top, which is what we did at SL-1.

Another type of engineered barrier, though, would consist of maybe these same layers of gravel and something to prohibit intrusion into it. But, for whatever purpose, for whatever design purpose, you might decide that you want a vegetative cover over the top of it. So, you would still have several multiple layers for an intrusion barrier, but the top layer would support vegetation.

MR. RENO: And I think -- if I can elaborate on it just a little bit, Frank.

I think, Beatrice, the section you're

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referring to are the CFA landfills and probably the NRF landfills.
MS. BEATRICE BRAILSFORD: Okay. Yeah.
MR. RENO: And the caps there were driven more -- there were a different set of contaminants and conditions with the life of the nuclides that were assumed to be present there.
And the -- for instance, with the CFA landfills, it was a municipal- or industrial-garbage-dump type of situation. And those types of covers are prescriptive in the landfill closure ARARs or requirements. And I believe that's also the case at NRF.
So, it may be that the site-specific conditions there -- although I'm not intimately familiar of all the details at those two caps -- was the factor during the consideration for utilizing those types of covers. It is a best management practice, if nothing else, for landfill closure.
MS. BEATRICE BRAILSFORD: So, we're assuming when it is closer to the pile of dirt than to an engineered barrier that those piles of dirt will erode away and we know how long it will take?

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MR. RENO: That's -- that's correct. That went into their design factors.
MR. O'NEILL: Now, what's germane, of course, to that is what is the contaminant and how long does it need to be protected.
MS. BEATRICE BRAILSFORD: You say if you -- you have so many alternatives in here.
MR. O'NEILL: Yeah.
MS. BEATRICE BRAILSFORD: Alternative 5a and Alternative 3b. You say institutional controls beyond 100 years would be required for contamination remaining at WAG 5.
So, that's the material you're taking to the soil dump; right?
MR. RENO: Right.
MS. BEATRICE BRAILSFORD: How long are the institutional controls going to be in place at the soil dump?
MR. RENO: Well, it would be a minimum of 100 years.
MS. BEATRICE BRAILSFORD: Okay. But we --
MR. RENO: And the --
MS. BEATRICE BRAILSFORD: We need it longer than that. How much longer and will they

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be there?
MR. RENO: Well, the goal will be that -- that those controls are in place in perpetuity. But for someone to say what is going to happen 100 years from now is very difficult, which is why we'll have to design the cover at -- at the proposed soil repository to be protective against an intrusion in the future.
First is at the -- which is what we did at the SL-1 burial ground, and that consisted of a riprapped layer over the top of the waste, layers to inhibit biological intrusion. And then we've got the -- the tombstone out there that says, here lies SL-1, don't build your house here. And it would be a similar type of thing that we would be proposing to do with the ICDF or some other repository.
But it would be a design factor to ensure that beyond 100 years that it would remain protective in some fashion.
UNIDENTIFIED AUDIENCE MEMBER: Unless we have an earthquake and the whole damn thing falls down.
MR. RENO: Well, that's also another design factor we will have to consider.

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MS. JEAN HOLDREN: Also another factor is where to put such a facility.
UNIDENTIFIED AUDIENCE MEMBER: We are on a nice fault up here.
MR. SIMPSON: Go ahead, Beatrice.
MS. BEATRICE BRAILSFORD: If a facility like Envirocare -- if that corporation goes under, who assumes the liability for the waste that's been disposed of there?
MR. RENO: Boy, I -- I don't know a definitive answer to that. And without having that, I probably ought not to speculate. But I think that there are some provisions in their licensing agreement with the State of Utah that -- that have provisions under which the State might have some involvement down the road.
MR. FRANK WEBBER: The State is an equal party to Envirocare, so you would assume that they would share or have some of that liability. How much of it they decide to shirk, who knows.
MS. BEATRICE BRAILSFORD: Did you say shirk or share?
MR. FRANK WEBBER: Whichever the case might be.
MR. DAVE CARLSON: I can't speak

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directly to Envirocare, because I haven't looked at it. But Utah's an agreement state, which means that they assume, for the NRC, the NRC rules. So, the State of Utah licensed Envirocare.

The way those things are set up in every other case that I'm aware of is there's money set aside during the operation of the facility. When the facility's through with operations and the closure is completed, then the State will assume honoring that facility using the funds that have been set aside for the period when Envirocare leaves the site.

MS. BEATRICE BRAILSFORD: And there's no scheduled provision presumably for our soil because it's on a DOE site?

MR. DAVE CARLSON: Right. It's federal government, so you don't have --

MS. BEATRICE BRAILSFORD: Right.

MR. SIMPSON: Okay. Question.

MR. TED CARPENTER: Well, I was simply going to say, my understanding is, that that area is one of the most a-seismic areas in the world. There is really less earthquake activity out there on that than in any other place in the

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world. Isn't that true, in terms of earthquake?

MR. O'NEILL: You're talking the Envirocare site? You're talking about --

MR. TED CARPENTER: No. I'm talking about out here, out here where the INEL is.

MR. O'NEILL: I'm not a seismologist, but there is seismic activity. People have talked about the dampening effect of the aquifer, but I'm sure that's probably controversial.

To divulge ourselves of responsibility for designing with seismic concerns, yeah, that -- there are standards, DOE standards, for seismic activity, and we have to build to those, as well.

MR. TED CARPENTER: Right. However, in terms of ever having an earthquake out there, it is not something that has been historically identified.

MR. RENO: I think you're right, Ted. But we need to be careful about what we say by "out there." Because along the edge of the Little Lost Range, there are active faults there.

And I'm not a seismologist either. It's my understanding that faults as recent as 15,000

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years ago on a 7.2 or greater -- and that, on the plain itself, over the fracture of the basalts, there are no identified fault lines as it goes through the basalts on the plain, because it does have a dampening effect.

But we've got references for that, Beverly, we can get for you if you want to see them.

MS. JEAN HOLDREN: Yeah. There were some very substantial studies performed -- we've done some very substantial seismic studies at the INEEL in order to satisfy the requirements for considering the wind tunnel experiments that you may have heard about for the housing project, effects of wind on housing that -- as part of a national program.

We have a probability map for seismic events across the INEEL. And the bottom line is, the probabilities are very, very low.

UNIDENTIFIED AUDIENCE MEMBER: Right. This used to be the Snake River Valley. Now, it's the Snake River Chem Site Valley.

MR. SIMPSON: Go ahead, Beatrice.

MS. BEATRICE BRAILSFORD: I'm just going to ask two more questions, I promise, because the

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other ones are so obscure that it's too embarrassing.

MS. JEAN HOLDREN: We won't be embarrassed.

MS. BEATRICE BRAILSFORD: In situ stabilization and encapsulation of the sanitary waste system site. You say that contaminant mobility would be reduced by more than 90 percent when you're grouting these tanks.

MR. O'NEILL: Right.

MS. BEATRICE BRAILSFORD: There is a proposal that the high-level waste tanks might be grouted. Are they looking at somewhere between -- perhaps up to 10 percent remaining mobility in that instance?

MR. O'NEILL: We have an expert here, but I'm not going to jump on his question. I don't know the answer to that. I do know that they're looking at completely cleaning those tanks out as one option.

Is that correct, Scott?

But I am really not in a position to discuss it.

MS. BEATRICE BRAILSFORD: But is there some mobility remaining whenever you grout

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something like that?
MR. O'NEILL: I would think so.
MR. FRANK WEBBER: In our particular case, with this waste, you need to remember you're talking about six inches of dried sludge. It's basically manure at this point that you would take out. So, encapsulation would probably work okay at that particular site.
Some of these other sites, I don't know that any of us in this room have enough information to adequately answer your question, but we could probably come up with the answer.
MS. BEATRICE BRAILSFORD: If you do the ISV of the tank, you say that the volume would be reduced by half. Is that common with in situ vitrification? So, like if we -- if INEL tried in situ vitrification at Pit 9, Pit 9 would not be one acre but half an acre?
MR. RENO: Well, you are taking something that has liquids, and it has void space, and melting it into a solid glass form. And that would be the volume reduction that you'd see. I don't know -- I don't know what the specific amount would -- would be.
MS. BEATRICE BRAILSFORD: But here at

the -- in your situation, you are predicting a 50 percent?
MS. JEAN HOLDREN: That's correct.
MR. O'NEILL: But the tank is largely empty. So, if you could imagine a 1,000-gallon tank --
MS. JEAN HOLDREN: And that's surrounded by gravel, which has a lot of air spaces.
MR. FRANK WEBBER: And has a significant amount of water in the tank, as opposed to the sludge. We're talking very little volume in the tank, and a good portion of that is in a liquid form that, you know, would readily be vaporized.
MR. SIMPSON: Any more questions?
MR. O'NEILL: Talk obscurely.
MR. SIMPSON: Let's take about a five-minute break, and then we'll come back and have the comment session.
(A recess was taken.)
MR. SIMPSON: Okay. This is the portion of the meeting where the public comments and your comments are entered into the record. And so, please, when you comment, clearly speak your name and give your address. And, that way, we can send you a copy -- a copy of the Responsiveness

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Summary, which is part of the Record of Decision, which you'll also receive.
So, who would like to start out? I'm going to use the microphone, too, to help out our court reporter.
Beatrice?
UNIDENTIFIED AUDIENCE MEMBER: You have a nice smile.
MR. SIMPSON: Oh, thank you.
Beatrice?
MS. BEATRICE BRAILSFORD: Sure.
MR. SIMPSON: Well, your comments might bring out some others.
MS. BEATRICE BRAILSFORD: My name is Beatrice Brailsford. And we, the Snake River Alliance, will certainly be submitting written comments.
I guess our fundamental concern remains, how does this fit together with the other cleanup actions? And I think that, you know, the notion that some caps won't last as long as other caps, I think, is something that we need to keep examining.
I would like to note that this might be the first cleanup plan that we've seen INEL say

that it's cheaper to clean it up than continue to monitor it until the end of time. And I think that that's probably a real good stride forward.
But, again, I think there's just some -- you know, in this plan, we have to remove the tanks so that we can clean up the soil.
And, in WAG 3, I asked specifically, don't you have to remove the tanks to clean up the soil? And the answer was no.
And then I think -- just a specific comment to this plan, and it's the same comment that we made to the WAG 3 plan. There's got to be a fair amount of public involvement when we're developing the Waste Acceptance Criteria for the soil dump. Because I know a lot of folks are edgy about that to begin with. And they're not going to get more relaxed if they don't know how we're going to decide what to put in it.
MR. SIMPSON: Thanks, Beatrice.
Anyone else?
MS. BEVERLY CARLYLE: I'll second her comment.
MR. SIMPSON: Okay. Comment is seconded.
MS. BEVERLY CARLYLE: But really, with

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this, I love the way that all of you gentlemen are so knowledgeable and how it does come into when you are presenting it to the so-called people.

We always go 100 years down the road. It would be real nice if -- when you boys do get together and have this, what is going on today? That's what it is. Because INEL will take care of this and that, and everything is great in 100 years. Today is the day. Are you going to be here in 100 years?

MR. SIMPSON: I hope not.

MS. BEVERLY CARLYLE: Gee, that's a sad statement. Because you just said that we are going to have this. But that's all right. We don't need to worry about growing anything out there because we're going to put houses out there. Thank you, Dear.

MR. SIMPSON: Can I have your name, for the record?

MS. BEVERLY CARLYLE: Beverly Carlyle.

MR. SIMPSON: Beverly Carlyle. Okay. Thank you.

Anyone else?

MR. TED CARPENTER: I'm Ted Carpenter,

representing the Shoshone-Bannock Tribes, 306 Pima Drive, Fort Hall.

To the Shoshone-Bannocks, the animals and plants out there, the native species, are part of the tribal heritage. As you know, I really don't see that need for that 48 -- 58 acres to have all of the native ecosystem be removed.

Also, of course, I want to remind you that you're not really disposing of anything. You're storing it. And -- and I do hope that if it ever reverts from DOE possession that it is returned to the Shoshone-Bannock Tribes to be preserved as an ecological preserve, an environmental preserve.

MR. SIMPSON: Okay. Thank you.

Anyone else?

Okay. With that, I just wanted to remind people that the comment period remains open until June 9 on this project. The next project that we will be having public involvement on will be the Central Facilities Area, some soils at the Central Facilities Area. And a proposed plan will be released sometime in summer, July or August.

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And, with that, thanks for coming and good night.

(The hearing was concluded at 8:27 p.m.)

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REPORTER'S CERTIFICATE

STATE OF IDAHO)
) ss.
County of Bonneville)

I, KIMBERLY CARPENTER, CSR, a Notary Public in and for the State of Idaho, do hereby certify:

That said hearing was taken down by me in shorthand at the time and place therein named and thereafter reduced to typewriting under my direction and control.

WITNESS MY HAND AND SEAL this the 20th day of May, 1999.

(Signature)
Kimberly Carpenter, CSR,
Notary Public in and for
the State of Idaho, residing
in Idaho Falls, Idaho.

(Seal) My Commission expires: Perpetual.

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